EXHIBIT N

Robert P. Andris (SBN 130290) randris@gordonrees.com Michael D. Kanach (SBN 271215) mkanach@gordonrees.com GORDON & REES LLP 275 Battery, Suite 2000 San Francisco, CA 94111 Telephone: 415-986-5900

Courtland C. Merrill (pro hac vice) cmerrill@anthonyostlund.com
Dan Hall (pro hac vice)
ANTHONY OSTLUND
BAER & LOUWAGIE P.A.
90 South Seventh Street, Suite 3600
Minneapolis, MN 55402
Telephone: 612-349-6969

Attorneys for Plaintiff JOHNSTECH INTERNATIONAL CORP.

UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

JOHNSTECH INTERNATIONAL CORP.,

Case No. 3:14-cv-02864-JD

Plaintiff,

REBUTTAL EXPERT REPORT OF MICHAEL ANDRES

VS.

JF MICROTECHNOLOGY SDN BHD,

Defendant.

- I, Michael Andres, declare as follows:
- 1. I am providing this report in order to disclose the testimony I may provide, if called as a witness in the trial of this case, in rebuttal to the expert report of T. Kim Parnell regarding the invalidity of U.S. Patent number 7,059,866.
- 2. I am employed by Johnstech International Corp. ("Johnstech") as an engineering manager. I have worked for Johnstech for over 21 years in various roles associated with

designing, troubleshooting and manufacturing contactors for testing integrated circuits as well as supervising other employees performing those activities. Prior to my employment at Johnstech, I worked at Micro Component Technology for two years as an associate mechanical engineer responsible for designing contactors and handler components. I have a Bachelor of Science degree in mechanical engineering from the University of Minnesota.

- 3. I have reviewed and analyzed U.S. Patent number 7,059,866 (referred to as "the '866 patent").
- 4. I have reviewed and analyzed U.S. Provisional Patent application number 60/465,022 filed on April 23, 2003.
- 5. I have reviewed and analyzed portions of the file history to the '866 patent during prosecution at the U.S. Patent Office.
- 6. I have reviewed and analyzed U.S. Patent number 5,594,355 (referred to as '355 Ludwig/Delta).
- 7. I have reviewed and analyzed U.S. Patent number 6,572,396 (referred to as '396 Rathburn/Gryphics).
- 8. I have reviewed and analyzed U.S. Patent number 6,019,612 (referred to as '612 Hasegawa).
- 9. I have reviewed and analyzed U.S. Patent number 5,947,749 (referred to as '749 Rathburn/Johnstech).
- 10. I have reviewed and analyzed U.S. Patent Pub number 2003/0068908 (referred to as Brandt).
- 11. I have reviewed and analyzed the expert report of T. Kim Parnell regarding invalidity of U.S. Patent number 7,059,866.

- 12. I am not an attorney, nor am I an expert regarding United States patent law. However, I have been informed of some of the legal principles that I understand guide analysis of the concepts in this case. I also have some understanding of United States patent law from my work at Johnstech and from my professional experience as a mechanical engineer. First, I understand that a patentable invention must be new. An invention is not new if each and every element in the claim is present in a single item of prior art. Second, I understand an invention must be nonobvious. An invention is obvious if it would have been obvious to a person of ordinary skill in the art of the claimed invention at the time the invention was made. In deciding obviousness, I understand one must avoid using hindsight; that is, you should not consider what is known today or what was learned from the teachings of the patent. You must put yourself in the place of a person of ordinary skill in the art at the time the invention was made. Third, I understand that the specification including the drawings of a patent must contain a written description sufficient to enable a person of skill in the art to make and use the invention as described in the claims. I understand that the '866 patent was issued by the United States Patent Office after examination and is presumed valid unless JF Microtechnology has clearly and convincingly proven invalidity. For the reasons below, I do not believe Dr. Parnell has shown that the '866 patent was improperly issued by the Patent Office.
- 13. The '866 patent relates to automated equipment used to test high volumes of integrated circuits. A contactor is the device used to connect an integrated circuit (abbreviated IC) to the machine that electronically tests the IC before it is sent off for use in the market. IC's have an electrical contact portion called a lead. The machines used to test the IC's have an electrical contact called a load board—a printed circuit board with an electrical terminal portion. The contactor is the apparatus used to connect the lead of the IC to the load board of the tester.

The contactor is a housing socket that holds the contacts that move thousands of times as ICs are electronically tested.

- 14. The original Johnstech S contact was invented as a higher performance alternative to pogo and cantilever products. The S contact was invented by Johnstech founder, David Johnson and is described in U.S. Patent No. 5,634,801 filed in 1994.
- 15. Early solid contact designs, including Johnstech's S contact, slid on the load board pad. Customer load boards can be very expensive and time consuming to replace.

 Johnstech's original S contacts produced load board wear. The Johnson '801 patent states that the circuit board terminal side of the contact may move laterally across the terminal. (See '801 patent, column 14, lines 14-36 and Fig. 7.)
- 16. Initially, Johnstech used a conductive device—a Pad Interface Device (PID)—between the contact and the load board to protect the load board from wear. PIDs were used as a sacrificial interposer between the contactor and load board (for the precursor S contact designs). PIDs add more electrical interfaces increasing contact resistance and decreasing contact reliability. Johnstech then invented a new product, the ROLTM technology, to prevent load board wear altogether.
- 17. The ROLTM technology was invented to extend load board pad life. The design intent was for the contact to produce a rolling action on the terminals of the load board. (See '866 patent, column 3, lines 55-68.) Within the '866 patent, "substantial elimination" of sliding by rolling is the feature that separates the invention from the prior art S contact. What this means to a person of skill in the development of test contactors, like me, is that the sliding motion of the contact on the load board is largely but not wholly eliminated. The Gilk ROLTM

invention will slide less by relative comparison than the original S contact it was designed to replace.

- 18. The '866 patent itself describes the invention as "a contact set assembly which solves many of the problems of the prior art. It enables positive contact to be established along electrical paths, yet it minimizes erosion of a lead of a load board 12." (See '866 patent, column 1, lines 21-24.) The '866 patent describes the invention by comparison to then existing closest technology, or prior art. The face of the '866 patent identifies the prior art that was considered during examination. (See '866 patent, References Cited.) Among listed prior art references, the Johnson '801 patent (which describes Johnstech's S contact) is called out as the reference cited by the examiner during prosecution. (*Id.* "* Cited by examiner".) From review of '866 patent itself, a person skilled in the art of test contactors would understand that "substantial elimination" of sliding, as described in claim 1, should be determined by relative comparison to existing prior art contactor technology, which the face of the '866 patent indicates as the S contactor described in the Johnson '801 patent that the invention was developed to replace.
- 19. Furthermore, the U.S Patent Office initially rejected the Gilk '866 patent because the examiner believed the Gilk invention was no different than the S contact described in the '801 patent. During the patent application process for the Gilk '866 patent, Johnstech distinguished the invention from the prior art Johnson '801 patent on the basis that the Gilk invention "substantially eliminates sliding" on the load board. (Johnstech's Amendment/Response to Non-Final Rejection dated 9/28/05 p. 6.) In other words, prior rolling contacts also slid on the load board pads, whereas the Gilk invention had very little sliding. Subsequent ROL™ patents virtually eliminated sliding on the load board pads. The prosecution

history provides a person skilled in the art with further basis to compare the claimed invention with the prior art to determine whether sliding motion had been substantially eliminated.

- 20. I understand that the following limitation in claim 1 of the '866 patent is written in functional terms: "as said contact is rolled between said first and said second orientations thereof, *sliding motion of said second end of said contact across the terminal is substantially eliminated*." In other words, I understand that the language "sliding motion ... is substantially eliminated" describes what the invention does—i.e., the invention substantially eliminates sliding—as opposed to a structural description of what the invention is—e.g., a rigid contact engaged with the housing wall. I understand that Johnstech takes the position that it is permissible to describe the invention in function terms. I also understand that JF Microtechnology contends that above limitation in claim 1 must be limited to the specific structure shown in the specification of the '866 patent. However, regardless how the court ultimately construes the functional claim language "sliding motion ... is substantially eliminated," the only devices capable of performing this function are those that engage the housing wall in the ways described by the '866 patent, for example, Johnstech's ROL products, JF Microtechnology's Zigma, and IDI's Archimedes.
- 21. The written specification and drawings of the '866 patent filed in 2004, which are materially the same as the description of the invention in the provisional application filed in 2003, show that sliding of the contact can be substantially eliminated in several ways, each of which involves engagement of the housing wall. One way to substantially eliminate sliding is to directly connect the tail of the contact with the housing wall. This way is expressly shown in the Figure (6) and specification of the '866 patent. (Column 3, lines 55-64.) This is also the way in which IDI's Archimedes device, referenced below, substantially eliminated sliding and infringed

the '866 patent. Another way to substantially eliminate sliding is to (1) directly engage the wall of the housing with the end of the contact AND (2) engage the housing wall with a sloped terminus or protrusion from the contact. This way is also expressly shown in the Figure (6) and specification of the '866 patent. (Column 3, lines 55-64.) Another way to substantially eliminate sliding is to indirectly engage the wall of the housing with the end of the contact. This is essentially what JF Micrtoechnology's Zigma product has done. Indirect engagement of the housing is not expressly disclosed in the Figure in the '866 patent. However, the '866 patent teaches use of the "contact tail in engagement with the housing wall". (Column 3, lines 55-64.) The '866 patent states that the Figure and written specification "in many respects, is only illustrative. Changes may be made in details, particularly in matters of shape, size, material, and arrangement of parts without exceeding the scope of the invention." ('866 patent, column 4, lines 17-30.) Therefore, a person of skill in the art would understand, from reading the Figure and written specification of the '866 patent, how to make each of the above-described variations of the invention without having to conduct lengthy or difficult experimentations.

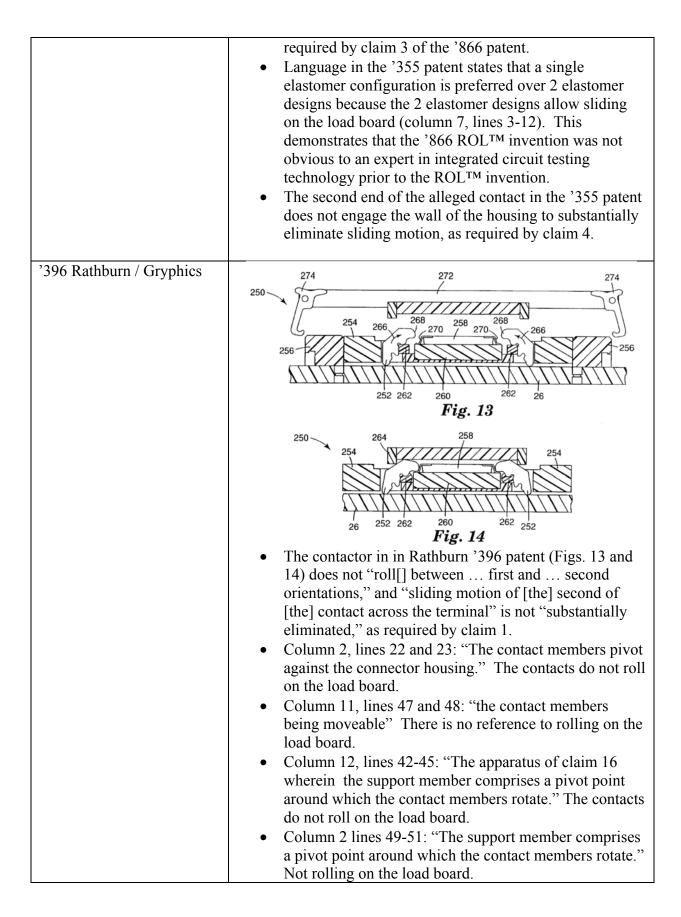
22. At the time of the Gilk invention in 2002, no solid rigid contact rolled across the surface of a load board and engaged the housing wall in order to substantially eliminate sliding motion. None of the prior art references cited by Dr. Parnell, and discussed below, teach or suggest engagement of the housing wall as a means to substantially eliminate sliding of the contact and, thereby, reduce load board wear. JF Microtechnology has not shown any evidence (and I am unaware of any evidence) that a person skilled in the art, like me, could build an apparatus for electrically connecting a lead of the integrated circuit to be tested to the load board, capable of satisfying all of the required limitations of claims 1, 2, 3, or 4 of the '866 patent, but

that utilizes a structure other than what a person of skill in the art would appreciate from review of the '866 patent.

- 23. I have been asked to address a number of the invalidity arguments made by JF Microtechnology's expert, Kim Parnell, Ph.D. I have only addressed those arguments raised by Parnell that were disclosed in JF Microtechnology's Invalidity Contentions dated February 5, 2015. I understand that JF Microtechnology has filed a motion for permission to amend its Invalidity Contentions to assert additional invalidity arguments. If JF Microtechnology is permitted to assert additional invalidity defenses, I reserve the right to supplement this report to address JF Microtechnology's additional invalidity arguments.
- 24. The table below summarizes my opinions regarding the various patents discussed in Dr. Parnell's report and why those patents do not invalidate patent number '866. This summary is not all-inclusive, but rather provides an overview containing representative information.

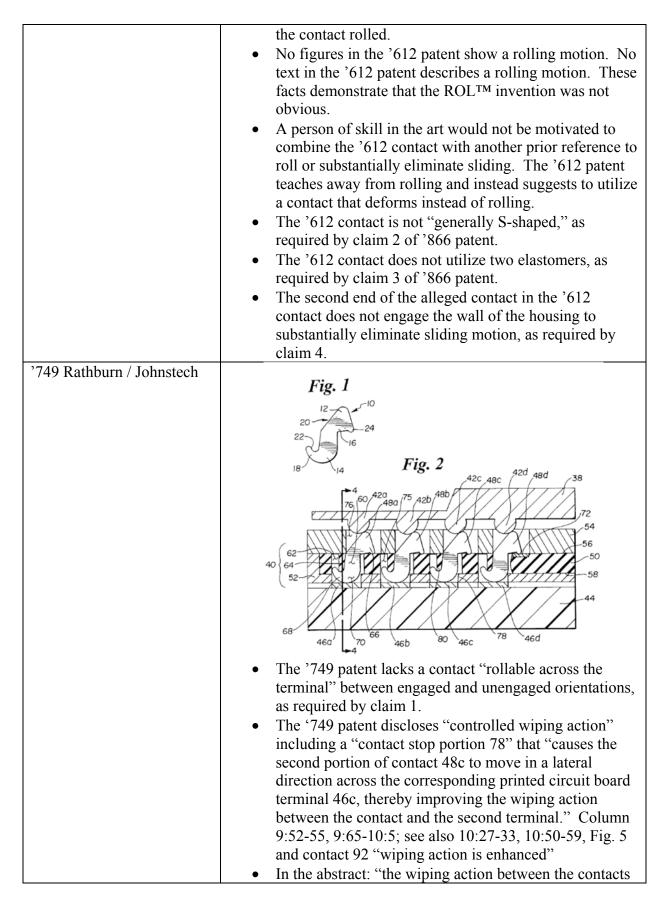
Patent Number	Differences between the prior art and the '866 patent
'355 Ludwig / Delta	510 518 102 102 102 102 102 108 116 114
	• The '355 patent lacks "a housing having oppositely facing surfaces, a first approachable by an integrated circuit to be tested and a second proximate the load board, a slot extend through said housing from a first of said oppositely facing surfaces to a second of said oppositely facing surfaces;" as required by claim 1 of the '866 patent.

- The '355 patent necessarily includes a cover plate 110 which retains the contacts and elastomer in the housing. Reference column 4, lines 13-17. Also column 5, lines 4-7 and lines 39-52. Also column 6, lines 9-12. Also column 7, lines 49-51 and 55-58.
- The '355 patent claims 4, 5 and 6 include a cover plate.
- The '355 invention must have a 2-piece housing and the ROLTM '866 invention is a 1-piece housing, thus making the two technologies fundamentally different.
- The patent '355 does patent does not "roll[] between ... first and... second orientation," and "sliding motion of [the] second of [the] contact across the terminal" is not "substantially eliminated," as required by claim 1.
- Patent '355 column 3, lines 1 and 2 "the probe pivots within the slot about the fulcrum, which rocks on the conductive area of the board." The patent '355 states that "the probe 106 [that] has a fulcrum 512 that makes contact with the trace 116 of the load board 114." (Column 6, lines 2-3.) "[T]he probe 106 undergoes a rocking or pivoting motion as the fulcrum 512 rocks or pivots on the trace 116 of the load board 114. During this rocking or pivoting motion, the stopper 516 (if provided.) moves into a channel 518 formed in the cover plate 110." (Column 6, lines 7-12.)
- A fulcrum is defined as "the point on which a lever rests or is supported and on which it pivots". A point touching the load board creates a high stress area that will cause wear of the load board and the pin. Low stress is a critical need for reduced wear and Ludwig didn't realize this. This is a critical missing concept from the '355 patent that makes the '355 patent very different from the '866 patent. A person of skill in the art attempting to reduce wear to the load board pads would not be motivated to combine the '355 patent with the Johnson '801 patent to make the ROLTM invention from '866 patent. The '355 patent teaches away from rolling, which is the design theory advanced in the '866 patent and missing from the Johnson '801 patent.
- Rocking and pivoting (point contact) are not the same as rolling (radius).
- All of the images in the patent also show point contact to the load board when the contact is compressed (ref figure 5).
- The '355 patent is not "generally S-shaped" as required by claim 2.
- The '355 patent does not utilize two elastomers as



- Reduced load board wear is not included in the patent language as a goal.
- The geometry shown in the figures does not include a low stress, low wear interface with the load board pad. All the outside radii on the contact are similar in size. A low stress design would have a large radius on the load board side in order to minimize load board pad wear. It also would be included in the descriptions of the patent as an important part of the invention. There are no such descriptions or images present in the patent.
- The '396 inventions are for testing edge cards (Column 1 lines 15-25). Johnstech ROLTM is not designed to test edge cards. The directions and locations of the applied forces are not the same. Edge card Device Under Test forces are at 90 degrees to the load board plane, whereas the ROLTM technology is designed to accommodate forces from the device that are 180 degrees from the load board plane. The two technologies have some similarities, but the design requirements are very different. The contacts in device-actuated versions of each invention in fact rotate in opposite directions from each other. This means that inventions for testing edge cards do not directly compare to those for testing Pad and Leaded devices.
- Figures 13 and 14 of '396 show a contact design that rotates in the same direction as the ROLTM invention. However, this invention does not meet claim 1 of '866. Claim 1 of the '866 requires: "said first end of said contact is engaged by the lead of the integrated circuit and urged into said slot;". Also refer to '866 column 3 lines 23-27: "DUT 14 is then moved closer to housing 10 as shown in the FIGURE. This effects engagement of the device 14 and the nose end 26 of a corresponding contact 18. Contacts 18 are thus rotated, their nose ends 26 engaged by opposing leads 17 and their tail ends 28 engaging terminals 16." Figures 13 and 14 of patent '396 show the manual actuator engaging the contacts and compressing them, rather than the device as stated in '866. Reference patent '396 column 9 lines 6-9: "An actuator 264 rotates the contact members 252 in a direction 266 so that the first interface portion 268 engages with the electrical leads on the device 258."
- Rathburn '396 did not recognize the need for a rolling load board interface. This demonstrates that the '866 ROLTM invention was not obvious.
- Rathburn '396 contact is not S-shaped as required by

	 claim 2 of the '866 patent. There is no indication in the prior art that a person of skill in the art would be motivated to combine Rathburn with another reference to change the shape of the contact. Rathburn '396 contact does not use two elastomers, as required by claim 3 of the '866 patent. Rathburn '396 contact does not include a protrusion engaging with the wall of the housing to substantially eliminate sliding motion of the terminal across the load board, as required by claim 4 of the '866 patent. Figures 13 and 14 of the '396 patent shows that the contact connects with the housing only before the contact is engaged by the manual actuator, opposite of what is required by claim 4 of the '866 patent.
'612 Hasegawa	FIG. 23 **FIG. 23 **IBA** 200 **IBA** 202 **IBA** 202 **IBA** 203 **IBA** 204 **IBA** 202 **IBA** 208 **IBA** 204 **IBA** 204 **IBA** 202 **IBA** 204 **IBA** 204 **IBA** 204 **IBA** 202 **IBA** 204 **IBA** 202 **IBA** 204 **IBA** 202 **IBA** 204



- and the device leads and/or the printed circuit board pads is also controlled," This states that the contacts wipe (move) on the printed circuit board pads. There is a similar statement in column 2 lines 60-62.
- Column 1 lines 31-35 "it is also desirable for the interconnect system to provide a wiping action between the contact and the printed circuit board terminal."
- Column 10 lines 1-5: "The contact stop portion 78 may cause the second portion of the contact 48C to move in a lateral direction across the corresponding printed circuit board terminal 46c, thereby improving the wiping action between the contact and the second terminal." Invention intentionally wipes on the load board pads.
- Column 10 lines 53 through 57: "As such, the wiping action between the second portion of the contact 48c and the printed circuit board terminal 46c is enhanced." Inventor prefers a wiping action on the PC board terminal.
- Column 13, lines 55-58: "tail portion 232 of contact 228, may thus simply rock relative to the corresponding printed circuit board terminals as shown in FIG. 14."
 This however just says it may rock and not that rocking is a goal. This description only applies to a "C" shaped version of the invention, not the "S" shaped versions.
 The ROLTM '866 patent claims a generally S-shaped contact.
- Column 15, lines 6-10: "This may increasing the effectiveness of any wiping action between the contact 300 and the printed circuit board pad or terminal." Similar statements column 15 lines 22-25 and 44-49, also column 16 lines 19-21, 51-54, 55, Column 17 lines 7-10.
- Claim 39 (column 21 lines 13-15) contact moves on load board side.
- Claim 40 (column 21 lines 22 and 23) wiping on load board terminal.
- Claim 41 (column 21 lines 26 and 27) wiping on load board terminal.
- The fact that the '749 patent is prior art but didn't include rolling or even a reference to purposely limiting the contact motion on the load board pads is evidence that the ROLTM invention was not obvious to a subject matter expert at the time.
- There is nothing about rolling contact with the load board pads described in the specific claims.
- Reduced load board wear is not stated as a goal.

25. The table below summarizes my opinions about the "SUMMARY OF

OPINIONS" in the expert report written by T. Kim Parnell.

Statement in T. Kim Parnell's	My opinion regarding the statement in the expert report
expert report	
"Claims 1-4 of the '866 Patent are each invalid as anticipated and/or rendered obvious by" (page 5 numbers 14 and 15)	 Patent '355 states that that a single elastomer configuration is preferred over 2 elastomer designs because the 2 elastomer designs allow sliding on the load board (column 7, lines 3-12). This demonstrates that the '866 ROL™ invention was not obvious to a person of skill in the art of integrated circuit testing technology prior to the ROL™ invention. ROL™ was also not anticipated by '355, because '355 discourages use of 2 elastomers. Rathburn's patent '396 did not recognize the benefits of a rolling load board interface. This demonstrates that the '866 ROL™ invention was not obvious to Rathburn at the time or anticipated by '396. No figures in the '612 patent show a rolling motion. No text in the '612 patent describes a rolling motion. These facts demonstrate that the ROL™ invention was not obvious and not anticipated by the '612 patent. In the Rathburn patent '749 column 1 lines 31-35 "it is also desirable for the interconnect system to provide a wiping action between the contact and the printed circuit board terminal." This demonstrates that the '866 ROL™ invention was not obvious to Rathburn at the time, and not anticipated by the '749 patent. None of those patents suggest to modify the Johnson '801 patent using the '866 Gilk solution. The PID was an obvious solution to the problem of load board wear and was the initial solution used by Johnstech. ROL™ was not obvious. US Patent Pub 2003/0068908 describes a change to the shape of the contact tip on the device side. This change produces a very short wipe on the device lead or pad, but a longer wipe on the contact tip. This invention does not lend itself to use on the load board pad will produce rapid wear on the load board pad. The invention produces the opposite effect of the ROL™ invention. The invention described in US Patent Pub 2003/0068908 can be used on devices during testing because a new device is tested only a few times at most,

	so the contact tip does not wipe on the device pad thousands or hundreds of thousands of times. This invention does not make '866 ROL TM obvious or anticipated.
"Claims 1-4 of the '866 Patent are invalid for failure to provide a written description that makes clear that the inventor invented what is claimed and/or that enables the person of ordinary skill in the art at the time of filing to make and use the full scope of the claimed invention without undue experimentation." (page 5 number 16)	In my opinion the descriptions in the '866 patent are sufficient for a person of ordinary skill in the art to construct a ROL TM contactor without undue experimentation. Prior art shows a concern that a low-stress, moving touch will not be sufficiently electrically reliable (point contact in '355, wiping on load board in '396 and '749 and no movement in '612). The '866 patent specifies methods to substantially eliminate sliding (by engaging the housing wall). Engagement with the housing wall can be done directly or indirectly. Reference the IDI Archimedes contact that was placed on the market for a short time (see figures below).
"Claims 1-4 of the '866 patent are also invalid for indefiniteness." (page 5, number 17)	The '866 patent contains references to the prior art. The information needed as a starting point with which to compare the sliding motion of the inferior prior art outside the scope of the Gilk invention is available within the '866 patent. Of the prior art listed on page one of the '866 patent (including '355, '801 and '612), the '801 "S" contact Johnson invention is the single design nearest in similarity to the ROL™ invention in comparison with the other prior art references, both those cited during prosecution and those that JF Microtechnology alleges invalidate the '866 patent. Also, the '866 patent mentions dual elastomer systems that slide on the load board pads and states that the ROL™ invention is intended to improve the performance of those systems. Therefore, it would be apparent to a person of ordinary skill in the art that the comparison referred to in '866 patent by the statement: "substantially eliminate the sliding motion" is a comparison to the '801 "S" contact. It is also clearly stated in the '866 patent that the reason for substantially eliminating sliding is to reduce load board pad wear. Therefore, in order to reduce the '866 invention to practice, a person of ordinary skill in the art would perform experiments comparing the performance of the '801 "S" contact invention to their invention with respect to load board wear, to the extent such person would not already possess information about the '801 patent from his or her own knowledge of the relevant prior art. A hypothetical person of ordinary skill in the art would most likely already be aware of the '801 patent.

"fail to specify a further limitation of the '866 Claim 1."	Claim 3 adds two elastomers for biasing and Claim 4 adds a protrusion that engages the housing wall to substantially eliminate sliding.
Page 23 number 70 (change to priority date due to the fact that the patent application had to be changed prior to being signed off.)	Provisional Patent application number 60/465,022 filed on April 23, 2003 is sufficient to show a person how to substantially eliminate sliding because it contains the same Figure and substantially the same written disclosures as the non-provisional application filed in 2004 that resulted in the '866 patent. The fact that the claims were amended in prosecution does not change the fact that the provisional application filed in 2003 upon which the '866 patent claims priority sufficiently shows how to substantially eliminate sliding motion of the contact against the surface of the load board.
Item 72 pages 24 and 25	A person of ordinary skill in the art could produce a prototype and then compare the sliding of the prototype on the load board to the prior art in order to determine whether their invention substantially eliminates sliding. It would also be possible to test the prototype and determine whether load board pad life has been improved in comparison to the prior art. There is a combination of factors that combine to produce load board pad wear, and the patent describes a method to reduce load board pad wear.

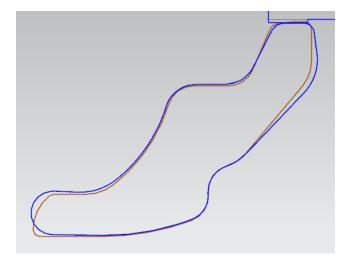
26. I may use as exhibits the documents and devices referred to within this report, the prior art, the PowerPoint presentation I used at the tutorial, documents related to Zigma produced in discovery by JF Microtechnology, samples of the Zigma product and Johnstech's ROLTM200 and prior art 2MM products, Johnstech documents produced in discovery in this case, the sample and available documentation regarding IDI's Archimedes product, and any of the exhibits admitted at trial or used as exhibits during depositions taken in this case.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 23 2015 at Minneapolis, Minnesota.

/s/ Michael Andres
Michael Andres

Reference: comparison of the former IDI Archimedes contact (blue) to Johnstech ROL™ 200 (brown).



Reference: the former IDI Archimedes contact also uses a housing back stop to prevent sliding.

